



**RADIO SCIENCE
FOR HUMANITY**

Network synthesis for Internet of Things

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Computer-aided design has been traditionally applied to computers and embedded systems but not to the communication infrastructure among them. The talk aims at contributing to fill this gap by proposing to use a mathematical language to model a distributed application in terms of tasks, hosting nodes, and interactions with the environment. Tasks are described in terms of computation and communication requirements also in relationship with state-of-the-art languages for system specification. Entities and relationships are introduced to relate tasks, data flows and environmental data to network nodes, channels among them and communication protocols. The resulting attributes and constraints can be used during a further design-space exploration to synthesize automatically a suitable communication infrastructure. The approach can be applied to significant applications of the so-called Internet of Things.